

REMARKS

Receipt of the Office Action of December 19, 2003 is gratefully acknowledged.

Claims 34 - 42 have been canceled as they are directed to a non-elected version of the invention. Applicants reserve the right, however, to file a divisional application for these claims, if necessary. Claims 22-33 have been examined and they are believed to patentably distinguish over the art of record.

The present invention as claimed in claims 22-33 relates in its broadest aspects as defined in claim 22, to an annular sliding fluoroplastics member with a composition including fluorine plastic and short fibers with a particular orientation of the short fibers, namely, 20 or more wt% oriented in a direction along which the magnitude of a load is large.

The present invention discloses a technique wherein the short fibers are oriented in the resin matrix thereby improving mechanical strength in a specified direction (i.e., the direction of fiber orientation) while maintaining matrix elasticity in the direction of fiber orientation.

Because of the present invention, a bearing made of resin and which requires deformation characteristics, the characteristics of following the deformation are improved which can prevent separation between layers. Also, buckling-resistance and pressure-resistance are improved in the load direction, thereby also improving mechanical strength.

Claims 22 - 24, 26, 27 and 33 are rejected as unpatentable under 35 USC 103(a) over Braus et al in view of Hartel et al; claim 25 is rejected as unpatentable under 35 USC 103(a) over Braus et al in view of Hartel et al and Stiff et al; claims 28 and 29 are rejected as unpatentable under 35 USC 103(a) over Braus et al in view of Hartel et al and Runton et al;

claims 30 and 31 are rejected as unpatentable under 35 USC 103(a) over Braus et al in view of Hartel et al and Board, Jr., and claim 32 is rejected as unpatentable under 35 USC 103(a) over Braus et al in view of Hartel et al , Board , Jr and Sumiyoshi et al.

These rejections have been carefully considered and specifically traversed.

Braus et al and Hartel et al form the basic components of each of the noted rejections. As previously noted, Braus et al discloses a technique wherein, in a composite material including fluororesin and short fibers, the matrix contains zinc sulfide or the like, thereby improving wear resistance of a friction contact or sliding layer of the composite material. There is no disclosure about short fiber orientation. And, as previously noted, Hartel et al discloses an annular resilient body of fiber composite material for vibration-insulating support of a drive assembly, while windable long fibers (not short fibers) are wound around a body which includes a plurality of wound concentric layers formed of synthetic resin impregnated fibers. There is no disclosure of orienting short fibers. With Hartel layer separate is a real possibility because of the use of long fibers.

The examiner expresses the opinion "that upon inspection of Figs 1 and 3 one of ordinary skill in the art can see that the fibers are short fibers." The fibers can just as easily be long fibers from viewing Figs. 1 and 3. Such speculation is not permitted under 35 USC 103. To conclude that Hartel et al discloses short fibers requires more than speculation. It requires an unequivocal and specific teaching which is tangible, one that leaves no room for speculation. To rely on what is shown in the drawings of a patent, which are not required to have any degree of engineering precision, is improper under 35 USC 103.


Moreover, layer separation is a problem. The coupling of the layers is by no

means assured, and is not even of concern to either Braus et al or Hartel et al. With the present invention, the layers are "integrally coupled to one another," see page 6, lines 13 and 14 of the specification. Once again, one would have to speculate as to whether Braus et al or Hartel et al have such a capability.

The basic combination of Braus et al and hartel et al must fail and as such cannot sustain a rejection under 35 USC 103.

In view of the foregoing, reconsideration and re-examination are respectfully requested and claims 22 - 33 found allowable.

Respectfully submitted,



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